

1-18 (Cancelled).

19. (New Claim) A method of using a carbon nanotube assembly,  
comprising:

arranging a signal responsive array of nanotubes on a  
substrate;

receiving a first signal by said array of nanotubes on said  
substrate;

switching said first signal relative to said array of  
nanotubes on said substrate; and

biasing at least one of said nanotubes in said array of  
nanotubes, with a second signal.

20. (New Claim) The method of using a carbon nanotube assembly as  
recited in claim 19, including:

modulating a signal relative to said at least one nanotube.

21. (New Claim) The method of using a carbon nanotube assembly as  
recited in claim 19, including:

detecting a signal by said at least one of said nanotubes  
on said substrate.

22. (New Claim) The method of using a carbon nanotube assembly as recited in claim 19, including:

heterodyning a signal on said array of nanotubes.

23. (New Claim) A method of amplifying a signal with a carbon nanotube device, comprising:

applying a first signal to said carbon nanotube device;

applying a second signal to said carbon nanotube device;

and

outputting a sum or product of said first signal and said second signal from said carbon nanotube device.

24. (New Claim) The method of amplifying a signal with a carbon nanotube device, as recited in claim 23, wherein said carbon nanotube device comprises an array of carbon nanotubes.

25. (New Claim) The method of amplifying a signal from a carbon nanotube device as recited in claim 24, wherein at least one of said carbon nanotubes is attached to a junction on a substrate.

26. (New Claim) The method of amplifying a signal from a carbon nanotube device as recited in claim 23, wherein said signal comprises a lightwave.

27. (New Claim) The method of amplifying a signal from a carbon nanotube device as recited in claim 26, wherein said junction comprises a metal.
28. (New Claim) The method of amplifying a signal from a carbon nanotube device as recited in claim 26, wherein said junction comprises a metal oxide.
29. (New Claim) The method of amplifying a signal from a carbon nanotube device as recited in claim 26, including:
- arranging an array of depressions on said substrate; and
  - placing a growth seed in at least one of said depressions.
30. (New Claim) A method of manufacturing a carbon nanotube switch comprising:
- placing a carbon nanotube on a receiving substrate;
  - arranging an array of conductive metallic portions on said substrate; and
  - arranging a carbon nanotube on at least one of said array of metallic portions on said substrate wherein a signal applied to said substrate is effective to actuate signal conduction through said carbon nanotube.

31. (New Claim) A method of amplifying a signal using a carbon nanotube amplifier comprising:

placing a carbon nanotube on a receiving substrate;

arranging an array of conductive metallic portions on said substrate; and

arranging a carbon nanotube on at least one of said array of metallic portions on said substrate wherein an application of energy from at least one external source applied to said substrate is effective to produce a signal from said amplifier having sum and difference components.

32. (New Claim) A method of moving a carbon nanotube which is attached by one end thereof, to a junction on a substrate, said method comprising:

applying a charge to said carbon nanotube; and

providing a repelling force to an adjacent structure from said carbon nanotube to which said charge has been applied.

33. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said junction comprises a nanoparticle.

34. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said junction comprises a catalyst.
35. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said junction comprises a metal.
36. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said junction is a metal oxide.
37. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said substrate comprises an array of depressions.
38. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said moving of said carbon nanotube comprises a bending of said nanotube.
39. (New Claim) The method of moving a carbon nanotube as recited in claim 32, wherein said adjacent structure comprises a further carbon nanotube.
40. (New Claim) The method of moving a carbon nanotube as recited in claim 32, including:
- arranging an electrical terminal on said substrate; and
- applying an electrical signal to said terminal.

41. (New Claim) A method of using a carbon nanotube assembly,  
comprising:

arranging a signal responsive array of nanotubes on a  
substrate;

heterodyning a signal processed by said array of  
nanotubes on said substrate.

42. (New Claim) The method as recited in claim 41, wherein said  
heterodyning said signal processed by said array of nanotubes  
comprises outputting a sum or product of said signal processed.

43. (New Claim) The method as recited in claim 41, wherein said  
signal processed is amplified by said carbon nanotube assembly.

44. (New Claim) The method as recited in claim 41, wherein said  
signal processed comprises a lightwave.

45. (New Claim) A method of switching a signal with a carbon nanotube switching assembly comprising:

placing at least one carbon nanotube on a receiving substrate;

arranging an array of conductive metallic portions on said substrate; and

arranging a carbon nanotube on at least one of said array of metallic portions on said substrate wherein a signal applied to said substrate is effective to actuate switching and signal conduction through said carbon nanotube switching assembly.

46. (New Claim) A method of controlling the manufacture of carbon nanotubes on a substrate, comprising:

providing a substrate with a plurality of growth locations thereon;

heating said substrate in a chamber;

introducing a carbon bearing gas to said chamber to create carbon nanotubes on said growth locations on said substrate;

applying an external controlling field to said chamber during said heating of said substrate; and

controlling growth of said carbon nanotubes on said substrate.

47. (New Claim) The method of controlling the manufacture of carbon nanotubes on a substrate as recited in claim 46, wherein said external controlling field comprises a static electric field.

48. (New Claim) The method of controlling the manufacture of carbon nanotubes on a substrate as recited in claim 46, wherein said external controlling field comprises a magnetic field.

49. (New Claim) The method of controlling the manufacture of carbon nanotubes on a substrate as recited in claim 46, wherein said external controlling field comprises an electromagnetic field.

50. (New Claim) The method of controlling the manufacture of carbon nanotubes on a substrate as recited in claim 46, comprising:  
influencing a separation of nanotubes by adjacent repulsion.



51. (New Claim) A method of controlling growth of a nanotube on a substrate comprising:

growing a plurality of nanotubes on a substrate;

applying an external field to said nanotubes during said growth of said nanotubes;

influencing the direction of said growing of said nanotubes by orientation of said external field relative to said nanotubes.

52. (New Claim) The method of controlling growth of a nanotube on a substrate as recited in claim 51, wherein said external field is a static electric field.

53. (New Claim) The method of controlling growth of a nanotube on a substrate as recited in claim 51, wherein said external field is an electromagnetic field.

54. (New Claim) A method of using a carbon nanotube comprising:
- providing a signal responsive nanotube array on a substrate;
  - switching a signal relative to at least a first nanotube on said substrate;
  - applying a first signal to said at least a first nanotube array on said substrate; and
  - biasing said at least a first nanotube with a second signal.
55. (New Claim) The method of using a carbon nanotube as recited in claim 54, comprising:
- modulating a signal relative to said nanotube.
56. (New Claim) The method of using a carbon nanotube as recited in claim 54, comprising:
- detecting a signal by said nanotube array.
57. (New Claim) The method of using a carbon nanotube as recited in claim 54, comprising:
- heterodyning a signal on said nanotube array,